

# INTRODUCING THE ORGANISATION OF TRAFFIC SAFETY DIVISION OF ROAD SAFETY AND TRAFFIC ENGINEERING, INSTITUTE FOR TRANSPORT SCIENCES LTD. (KTI)

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## 1. THE INSTITUTE

The objective of the Institute for Transport Sciences (KTI), as a national research institution, is to study, adapt and publish the theoretical and practical aspects required for the development and operation of transport in order to satisfy social and economic demands. During the past 10 years the Institute – in addition to surveys and specific studies – has carried out an average of 500 projects and research-development commissions per year. In August 2002, the number of full time KTI employees was 135.

### 1.1 Background

The first predecessor of the Institute for Transport Sciences was founded in 1938. In the light of economic developments, beginning in 1970 a new dimension was added to the activities, which concentrated on research and development studies for the improvement, maintenance and operation of public roads.

As the Institute has developed, so the proportion of commissions in passenger and freight transport, urban transport and traffic safety – including their various sub-sectors – has increased. The demand for transport efficiency, combined with ever closer and more complex relationships between society, economics and transport, has made it necessary to carry out studies in environmental protection, traffic management, logistics, telematics and information technology on an international basis, related to networks and systems, reaching beyond the transport sector. As a result of Hungary's intentions to join the European Union, the volume of re-

search related to EU harmonisation and sustainable transport has increased since the mid nineties.

### 1.2 Management

The Institute, previously state-owned, and later incorporated as a shareholder company, de facto is a "non-profit" organisation. Ownership rights over KTI are exercised by the Ministry of Economy and Transport.

Approximately 50 percent of the revenue of the Institute comes from government contracts – mostly related to the Ministry of Economy and Transport – while the remainder comes from studies, research, surveys and advisory commissions requested by local municipalities, road management, and foreign entities. The Institute has an interest in TÜV-Hannover-KTI Ltd, a German-Hungarian joint venture.

### 1.3 Research potential

The Institute's research capacity is ensured by its highly educated professional staff, by its working traditions which date back half a century, and by its sophisticated information base and laboratories. Fifty percent of the employees possess a university or college degree, and forty percent have two diplomas. About forty percent of employees are competent in a foreign language. A quarter of the nation's transport experts with Euro-engineering diplomas work for the Institute, while 18 members of the professional staff have university doctorates. Five of the researchers have Ph.D. qualifications, while three other scientists have D.Sc. degrees in transportation and two of them have the recognition of a lec-

turer at a university as well. Some 40 of the Institute's researchers occupy approximately 80 seats in various Hungarian, and international scientific and professional organisations as committee, advisory or board members.

The Institute has established valuable databases, primarily through general and specific data collection activities carried out as part of the commissions received from the Ministry of Economy and Transport and from the road management sector. They include:

- freight routing for road, railway and inland waterway transport (domestic, transit, export, import),
- passenger transport and public transport data, typical traffic and travel characteristics,
- air pollution and noise level data.

The Institute's library, which contains about 70,000 volumes and over 200 Hungarian and foreign journals, is the central professional information and documentation source for transport.

This documentation centre is in contact with major libraries throughout the world.

Six of the Institute's laboratories are accredited by the Hungarian Accreditation Board. The Institute is a UN ECE approved testing and certification centre for several sectors of transport. The Institute has the TÜV-certifications for the quality assurance systems ISO 9001 and ISO 14001.

### 1.4 Main fields of activity of KTI

The following divisions can be found in the main building of the Institute (Thán Károly u. 3-5, Budapest,

1119, Hungary):

- Documentation and Information Centre = the KTI Library,
- Environmental Protection and Acoustics Division,
- Division of Road Safety and Traffic Engineering,
- Division of Transport Economics,
- Division of Transport System Research and Network Planning,
- Bureau for Research Organisation and Development,
- TEM Bureau,
- TRANSORG, Division of Transport Organisation and Development,
- AUT-O-MAT, Vehicle Operation and Maintenance Division,
- Division of Air Protection and Engine Technology.

The annex (Temesvár u. 11-15, Budapest, 1116, Hungary) is the site

of the

- Road and Bridge Division.

Figure 1 shows the organisational scheme of the KTI, while Photograph 1 shows the main building of the Institute.

## 2. THE DIVISION OF ROAD SAFETY AND TRAFFIC ENGINEERING

### 2.1 The importance and situation of road safety in Hungary

The maintenance and improvement of road safety is one of the main aims of transport policy. Road safety activity is extremely complex, involving at the same time, for example, issues with technical (vehicle and road

engineering), organisational (traffic engineering), legislative ruling, training, control, health, economic and environmental protection characteristics. From the aspect of road safety, road traffic is of outstanding importance, because more than 90% of the people killed or injured in traffic accidents are victims of road accidents.

1990 was the “black year” in the history of Hungarian road transport, with almost 2,500 people senselessly killed as a result of road traffic accidents. Since then, significant improvements have been achieved, as by 2000, the number of road accident fatalities had fallen to 1,200. In this, a significant role was played by the National Road Safety Programme, elaborated under the leadership of KTI Rt. and the collaboration of vari-

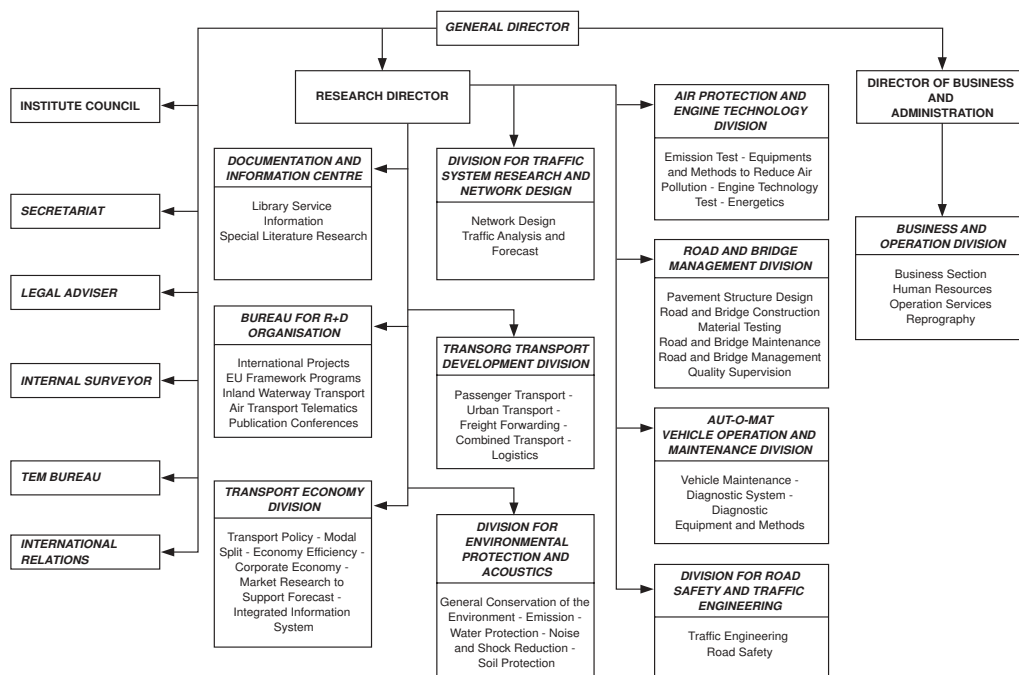


Fig. 1 Organisational scheme of the KTI



Photo 1 The main building of the Institute

ous other outside experts, and later approved by the Hungarian Government in 1993. This Programme has foreseen concerted measures in all fields of traffic safety activity.

The Division also participated in the elaboration of the Programme and with its own means and possibilities takes a role in the implementation of the set targets.

## 2.2 Activity and results of the Division

On the one hand, we take part in the solving of problems related to road safety and traffic engineering through the implementation of the

work related to research and development, value analysis, legislative preparation, international activities and responsibilities, or through the coordination and integration of the activities performed by other, outside experts.

On the other hand, we also take an active part in the elaboration of the tasks emerging on the market and pertaining to the professional field of the Division.

## 2.3 The main professional fields of our activity:

- analysis of road traffic accident data,
- research on accident causes and

“black spots”,

- elaboration and operation of the information system of road traffic safety,
- study of the role of human factors,
- development of energy efficient, safe and environmentally friendly methods of traffic organisation and management,
- development of urban transport facilities,
- scientific grounding of the activities for the preparation of decision-making, directed to traffic safety improvement, solving research-development tasks,
- development of road safety and traf-

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fic engineering interventions and of the technical regulations and certification of the methods on traffic regulation,

- preparation and co-ordination of sectorial and sub-sectorial activities for the preparation of decision-making,
- participation in the implementation and preparation of the tasks resulting from international responsibilities on road safety and traffic engineering,
- evaluation of road safety and traffic engineering measures, including cost/benefit analysis,
- measurement and analysis of traffic flows,
- preparation of road safety regulations,
- participation in the work of the international road safety organisations and implementation of the membership tasks (CEMT, IRTAD, FERSI, OECD, etc.)

## **2.4 Traffic engineering test car**

The Division has a “moving laboratory” consisting of two main units: the instrument-vehicle and a camera lifting device mounted on a single-axle trailer.

Equipment of the instrument-vehicle (Toyota Hiace):

VHT MUVITAS video-tachograph system (built into the vehicle, or in mobile form), Pentium 133 onboard computer, VIVA TRAFFIC 2.0 special video-picture analysing software (a professional tool for measuring distance, speed and acceleration of vehicles from video tape, and which, in the case of local measurement, also makes it possible to evaluate the results on the spot), energy

supply providing inverter, or current-generator. If necessary, with the help of the lifting device, one or two remote control cameras can be lifted to a height of 14.5m.

## **2.5 Some important tasks of the Division**

Each year we report to the Government on the road safety situation of Hungary. At the same time we elaborate the road safety action programme for the following year, with contributions from other ministries involved in road safety. The continuous participation in the improvement of the Hungarian legislation (Highway Code, etc.) with regard to road safety is one of our most important tasks.

KTI is a national research institute in the field of road safety, and, as a regular member of FERSI (Forum of European Road Safety Research Institutes), takes part in significant international co-operation and consortia (SARTRE, MASTER, PHARE Multi-country Road Safety projects, etc.).

KTI is the national co-ordinating institute of the IRTAD (International Road Traffic and Accident Database) database of OECD countries.

The Division took part in the evaluation and improvement of the point demerit system of drivers as well as the first Hungarian National Traffic Safety Programme. The methodological results of the evaluation of different countermeasures (for example, the use of daytime running lights) commanded interest and are widely used and referred to. The methodological results of the international comparison of road safety are

also remarkable.

The evaluation of the socioeconomic costs of road accidents is another significant task of the Division. At present the “willingness to pay” method is used for this purpose, and the first results of the survey will be presented next year. A further important task is the linking of the hospital, rescue and police accident databases, in order to obtain a clear picture of the magnitude of the road safety problem and of the true level of under-reporting. Members of the Division are the Hungarian representatives of the most important international road safety organisations (ECMT, PIARC, OECD, ECE WP1) and initiatives (GRSP).